

PAT-NO: JP404208418A

DOCUMENT-IDENTIFIER: JP 04208418 A

TITLE: METHOD AND APPARATUS FOR CONTINUOUSLY
STRENGTHENINGLY
FORMING FIBER REINFORCING THERMOPLASTIC RESIN SHEET

PUBN-DATE: July 30, 1992

INVENTOR-INFORMATION:

NAME

NISHITANI, TERUYUKI

SAWA, MASA AKI

SAITO, TOSHIO

INT-CL (IPC): B29C043/22, B29C043/48 , B29C043/52

ABSTRACT:

PURPOSE: To produce FRP stampable sheet having good quality surface properties and high strength by a method wherein web is compressed by ventilative heating and simultaneously pressing so as to decrease void volume and the air in the web is further extracted by gradual heating and pressing.

CONSTITUTION: Web 1, which is sent from a paper making manner process and has the void volume of 50% or more, is quickly heated in the chamber 9 of a ventilative heating device 2 by being blown with hot air against its top face, so as to melt some part of the resin in the web 1 and, at the same time, pushed with ventilative pressure against a belt 8 so as to decrease the void volume of the web while decreasing its thickness. Next, the web 1, which has passed through the ventilative heating device 2, is pinched between two steel belts 4 in continuous form and introduced in a belt pressing device 3 so as to be gradually heated and pressed with rolls 11 in an air venting zone 5 in order to decrease its thickness, resulting in deaerating. Further, the resultant web is, in succession, sent to a heating and pressing zone 6 so as to be evenly compressed with roller trains 13 under the condition being held at constant temperature in order to be formed in the sheet having the required thickness.

Next, the resultant sheet is pressed in a cooling zone 7 so as not to expand and cooled down to the required temperature and finally lead out.

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----- KWIC -----

Abstract Text - FPAR (1):

PURPOSE: To produce FRP stampable sheet having good quality surface properties and high strength by a method wherein web is compressed by ventilative **heating** and simultaneously pressing so as to decrease void volume and the air in the web is further extracted by gradual **heating** and pressing.

Abstract Text - FPAR (2):

CONSTITUTION: Web 1, which is sent from a **paper** making manner process and has the void volume of 50% or more, is quickly **heated** in the chamber 9 of a ventilative **heating** device 2 by being blown with hot air against its top face, so as to melt some part of the **resin** in the web 1 and, at the same time, pushed with ventilative pressure against a belt 8 so as to decrease the void volume of the web while decreasing its thickness. Next, the web 1, which has passed through the ventilative **heating** device 2, is pinched between two steel belts 4 in continuous form and introduced in a **belt pressing** device 3 so as to be gradually **heated** and pressed with rolls 11 in an air venting zone 5 in order to decrease its thickness, resulting in deaerating. Further, the resultant web is, in succession, sent to a **heating** and pressing zone 6 so as to be evenly compressed with roller trains 13 under the condition being held at constant temperature in order to be formed in the sheet having the required thickness. Next, the resultant sheet is pressed in a cooling zone 7 so as not to expand and cooled down to the required temperature and finally lead out.

Title of Patent Publication - TTL (1):

METHOD AND APPARATUS FOR CONTINUOUSLY STRENGTHENINGLY FORMING FIBER REINFORCING THERMOPLASTIC **RESIN** SHEET

File Edit View Tools Window Help



	Document ID	Title
33	JP 01286851 A	Continuous laminate board pro
34	JP 01110915 A	Insulated corrugated cardboa
35	JP 01068594 A	Laminating heat-sensitive adhe
36	JP 63283947 A	Laminate board produ. - invol

特開昭64-68594 (B)

第 2 図

DER WENT-ACC-NO: 1989-120569

DER WENT-WEEK: 198916

TION LTD

Times New Roman 12

TITLE: Laminating heat-sensitive adhesive resin precoated film
to paper - by laminating film to paper and feeding
laminate between lustering endless steel belt and pressing
endless belt

PRIORITY-DATA: 1987JP-0225389 (September 10, 1987)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 01068594 A	March 14, 1989	N/A	005	N/A

INT-CL (IPC): B29C065/48, B29L009/00, D21H001/04

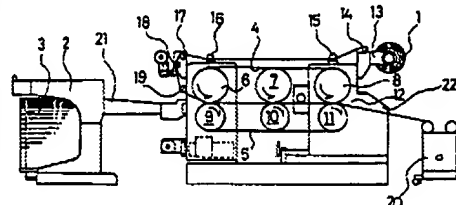
ABSTRACTED-PUB-NO: JP 01068594A

BASIC-ABSTRACT:

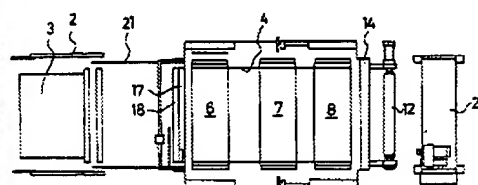
Laminating heat sensitive adhesive resin precoated film on paper comprises
laminating the film on the paper and feeding the paper between a lustering
endless steel belt and a pressing endless belt to compression weld the film to
the paper.

USE - For glossy paper mfr.

----- KWIC -----



第 3 図



File Edit View Tools Window Help



Document ID	Title
36 JP 63283947 A	Laminate board prodn. - invol
37 JP 63098434 A	Laminate sheet prodn. - using
38 DE 3515629 A	Producing copper coated prep
39 DE 3513136 C	Continuous press for mfg. resi

U.S. Patent Aug. 18, 1987 Sheet 1 of 3 4,687,528

DERWENT-ACC-NO: 1986-299050

DERWENT-WEEK: 198646

ION LTD

Times New Roman 12

TITLE: Producing copper coated prepreg laminate - using double continuous band to press laminate together and act as substrate for electrolytically pptd. copper

INVENTOR: HELD, K

PRIORITY-DATA: 1985DE-3515629 (May 2, 1985), 1986EP-0105597 (April 23, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 3515629 A	November 6, 1986	N/A	011	N/A
CN 8603035 A	November 12, 1986	N/A	000	N/A
DE 3662240 G	April 13, 1989	N/A	000	N/A
EP 203368 A	December 3, 1986	G	000	N/A
EP 203368 B	March 8, 1989	G	000	N/A
JP 61255858 A	November 13, 1986	N/A	000	N/A
JP 91002661 B	January 16, 1991	N/A	000	N/A
SU 1438636 A	November 15, 1988	N/A	000	N/A
SU 1542430 A	February 7, 1990	N/A	000	N/A
US 4687528 A	August 18, 1987	N/A	000	N/A

INT-CL (IPC): B29C065/02, B29L009/00, B32B015/08, B32B031/04, B32B035/00, C25D003/38, C25D005/00, C25D007/06, C25D017/00, H05K003/46

ABSTRACTED-PUB-NO: DE 3515629A

BASIC-ABSTRACT:

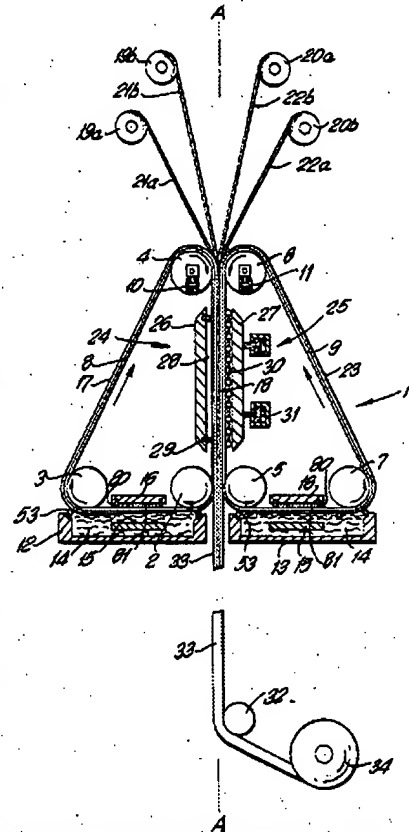


FIG. 1

DERWENT-ACC-NO: 1986-299050

DERWENT-WEEK: 198646

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TITLE: Producing copper coated prepreg laminate - using double continuous band to press laminate together and act as substrate for electrolytically pptd. copper

INVENTOR: HELD, K

PRIORITY-DATA: 1985DE-3515629 (May 2, 1985) , 1986EP-0105597 (April 23, 1986)

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PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 3515629 A	November 6, 1986	N/A	011	N/A
CN 8603035 A	November 12, 1986	N/A	000	N/A
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JP 61255858 A	November 13, 1986	N/A	000	N/A
JP 91002661 B	January 16, 1991	N/A	000	N/A
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SU 1542430 A	February 7, 1990	N/A	000	N/A
US 4687528 A	August 18, 1987	N/A	000	N/A

INT-CL (IPC): B29C065/02, B29L009/00 , B32B015/08 , B32B031/04 , B32B035/00 , C25D003/38 , C25D005/00 , C25D007/06 , C25D017/00 , H05K003/46

ABSTRACTED-PUB-NO: DE 3515629A

BASIC-ABSTRACT:

Producing a copper coated resin impregnated laminate whereby a thin copper layer is electrolytically pptd. onto the facing sides of two continuous press

bands and prior to a reaction zone the two bands are pressed onto the two surfaces of the impregnated laminate. The whole laminate is then passed through the reaction zone where it is pressed together.

USE/ADVANTAGE - Producing starting material for conductor plates where copper layers are produced on paper or glass fibre tissue satd. in phenol or epoxy resin. Process is one stage with the locating of sensitive copper foil onto the prepreg. being avoided. Faults in the surface such as dust, folds or pores is reduces. A very thin copper layer can be used.

ABSTRACTED-PUB-NO: EP 203368B

EQUIVALENT-ABSTRACTS:

Method for the continuous production of copper-clad laminates, which consist of a core of several layers of insulating material and of an electrolytically precipitated copper foil or foils disposed on one or both surfaces of the core, wherein the resin-impregnated layered substance webs for the core are unreel from stock rolls, brought together with one or two copper foils into a layer formation and subsequently so guided between two endless press bands of a double band press, which are moving at the same speed, that either the copper foil lies against one side of the layered substance core as well as against a press band or the first copper foil lies against one side of the layered substance core as well as against a press band and the second copper foil lies against the other side of the layered substance core as well as against the other press band, this layer formation is set into the copper-clad laminate web under the influence of heat and pressure in the reaction zone lying between both the press bands, the copper-clad laminate web subsequently leaves the double band press behind the reaction zone in advancing direction of the press bands and is thereafter either divided up into plates of desired size or reeled into a stock roll in case a flexible laminate web is concerned, characterised thereby, that a copper layer is electroplated onto a part of a press band or both press bands, which part is situated in front of the reaction zone in the direction of advance of the continuously moving press bands and on that side of the press band or bands, which faces the layered substance, this copper layer is transported by the press band or bands into the reaction zone, this copper layer is then used in the reaction zone as copper foil for pressing together with the layered substance webs and the copper foil of the copper-clad laminate web is continuously detached from the press bands on cleaving the double band press. (18pp)

US 4687528A

For fabrication of Cu-lined laminates, forming the base for printed circuit boards, a double band press (1) is positioned vertically, with six reversing drums (2-7), three drums forming a triangle over which each band (8,9) is stretched. Troughs (12,13) under the horizontal parts of the belt are filled with Cu sulphate electrolyte and the belt is in contact with the electrolyte while Pb plates (15) are immersed in the electrolyte to act as anodes and further external plates (16) press on the belt through a contact layer (81) of Hg. The bands, one or both coated with Cu pass upwards and webs (21a, 21b, 22a, 22b) of resin -impregnated glass fibre tissue are introduced, the combination passing into a reaction zone (18) where pressure is exerted (26,27) on the bands and heat cures the resin.

ADVANTAGE - Continuous process avoids intermediate storage of Cu foils and diminishes the danger of defects. (10pp)o

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Basic Abstract Text - ABTX (1):

Producing a copper coated resin impregnated laminate whereby a thin copper layer is electrolytically pptd. onto the facing sides of two continuous press bands and prior to a reaction zone the two bands are pressed onto the two surfaces of the impregnated laminate. The whole laminate is then passed through the reaction zone where it is pressed together.

Basic Abstract Text - ABTX (2):

USE/ADVANTAGE - Producing starting material for conductor plates where copper layers are produced on paper or glass fibre tissue satd. in phenol or epoxy resin. Process is one stage with the locating of sensitive copper foil onto the prepreg. being avoided. Faults in the surface such as dust, folds or pores is reduces. A very thin copper layer can be used.

Equivalent Abstract Text - ABEQ (1):

Method for the continuous production of copper-clad laminates, which consist of a core of several layers of insulating material and of an electrolytically precipitated copper foil or foils disposed on one or both surfaces of the core, wherein the resin-impregnated layered substance webs for the core are unreeled from stock rolls, brought together with one or two copper foils into a layer formation and subsequently so guided between two endless press bands of a double band press, which are moving at the same speed, that either the copper

foil lies against one side of the layered substance core as well as against a press band or the first copper foil lies against one side of the layered substance core as well as against a press band and the second copper foil lies against the other side of the layered substance core as well as against the other press band, this layer formation is set into the copper-clad laminate web under the influence of heat and pressure in the reaction zone lying between both the press bands, the copper-clad laminate web subsequently leaves the double band press behind the reaction zone in advancing direction of the press bands and is thereafter either divided up into plates of desired size or reeled into a stock roll in case a flexible laminate web is concerned, characterised thereby, that a copper layer is electroplated onto a part of a press band or both press bands, which part is situated in front of the reaction zone in the direction of advance of the continuously moving press bands and on that side of the press band or bands, which faces the layered substance, this copper layer is transported by the press band or bands into the reaction zone, this copper layer is then used in the reaction zone as copper foil for pressing together with the layered substance webs and the copper foil of the copper-clad laminate web is continuously detached from the press bands on cleaving the double band press. (18pp)

Equivalent Abstract Text - ABEQ (2):

For fabrication of Cu-lined laminates, forming the base for printed circuit boards, a double band press (1) is positioned vertically, with six reversing drums (2-7), three drums forming a triangle over which each band (8,9) is stretched. Troughs (12,13) under the horizontal parts of the belt are filled with Cu sulphate electrolyte and the belt is in contact with the electrolyte while Pb plates (15) are immersed in the electrolyte to act as anodes and further external plates (16) press on the belt through a contact layer (81) of Hg. The bands, one or both coated with Cu pass upwards and webs (21a, 21b, 22a, 22b) of resin -impregnated glass fibre tissue are introduced, the combination passing into a reaction zone (18) where pressure is exerted (26,27) on the bands and heat cures the resin.

DERWENT-ACC-NO: 1978-00931A

DERWENT-WEEK: 197801

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TITLE: Metallised paper prodn. - involves applying a metal vapour to an opt. patterned synthetic resin film formed on a web

PRIORITY-DATA: 1976JP-0054600 (May 12, 1976)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 52137017 A	November 16, 1977	N/A	000	N/A
GB 1556805 A	November 28, 1979	N/A	000	N/A

INT-CL (IPC): B05D001/28, D21H001/18

ABSTRACTED-PUB-NO: JP 52137017A

BASIC-ABSTRACT:

Method comprises (a) applying a synthetic resin coating agent to a running endless belt, (b) pressing and adhering a web to the belt by means of pressing and heating rolls to contact the coating agent with web. (c) sepng. the web from the belt to form a synthetic resin film on the web, (d) pressing the surface of the synthetic resin film by means of finishing endless belts to form a smooth surface or uneven pattern surface, and (e) applying a metal vapour to the smooth or uneven pattern surface undr vacuum.

An excellent metallic glossy paper may be easily produced.

----- KWIC -----

Basic Abstract Text - ABTX (1):

Method comprises (a) applying a synthetic resin coating agent to a running endless belt, (b) pressing and adhering a web to the belt by means of pressing and heating rolls to contact the coating agent with web. (c) sepng. the web from the belt to form a synthetic resin film on the web, (d) pressing the surface of the synthetic resin film by means of finishing endless belts to form a smooth surface or uneven pattern surface, and (e) applying a metal vapour to the smooth or uneven pattern surface undr vacuum.

Basic Abstract Text - ABTX (2):

An excellent metallic glossy paper may be easily produced.

Title - TIX (1):

Metallised paper prodn. - involves applying a metal vapour to an opt. patterned synthetic resin film formed on a web

Standard Title Terms - TTX (1):

METALLISE PAPER PRODUCE APPLY METAL VAPOUR OPTION PATTERN
SYNTHETIC RESIN
FILM FORMING WEB

DOCUMENT-IDENTIFIER: US 20020096246 A1

TITLE: NON-WOVEN ELASTIC MICROPOROUS MEMBRANES

----- KWIC -----

Pre-Grant Publication (PGPub) Document Number - PGNR (1):

20020096246

Detail Description Paragraph - DETX (28):

[0043] The microporous membranes 52 of the present invention is useful in various articles 60 of manufacture, such as clothing and clothing accessories with particular applicability to outdoor wear. Clothing accessories may include, without limitation, gloves, **socks**, boots and/or other accessories known in the art. Additionally, other types of outdoor articles also may incorporate the microporous membrane 52 of the present invention, such as tents, tarpaulins, hammocks, furniture coverings and/or other outdoor uses determinable by those skilled in the art.

Claims Text - CLTX (18):

17. The microporous membrane product of claim 1, wherein the product comprises an article of manufacture selected from the group consisting of clothing, tents, gloves, **socks**, and boots.

PAT-NO: JP403183513A

DOCUMENT-IDENTIFIER: JP 03183513 A

TITLE: MANUFACTURE OF ENDLESS MELAMINE RESIN
DECORATIVE SHEET

PUBN-DATE: August 9, 1991

INVENTOR-INFORMATION:

NAME

KOBAYASHI, KEN

SUGIYAMA, KAZUHIRO

INT-CL (IPC): B29C043/30, B32B015/08 , B32B033/00

US-CL-CURRENT: 264/319

ABSTRACT:

PURPOSE: To obtain endlessly and continuously a melamine decorative sheet having an equal quality to that obtained with a batch method, by a method wherein a set of impregnated sheets of paper are inserted between steel belts of a continuously molding press machine having the steel belts and they are pressurized and molded with tension of the steel belt and pressure through a pressurizing part with a fluid.

CONSTITUTION: Respective rolls of overlay impregnated paper 1 which is obtained by impregnating overlay paper with quick hardening melamine resin, pattern impregnated paper 2 which is obtained by impregnating pattern paper with the quick hardening melamine resin, core impregnated paper 3 which is obtained by impregnating core paper with quick hardening phenolic resin and packer impregnated paper 4 which is obtained by impregnating packer paper with quick hardening phenolic resin or quick hardening melamine resin are fitted to an impregnated paper reel off device A so that they can be laminated in order from the upper one and inserted into a continuous molding press machine B. The continuous molding press machine B is constituted of a heating drum 5, endless steel belts 6, 7 and a pressurizing part 8 and driving of the endless steel

belt is performed with the heating drum. A set of the sheet of the impregnated paper inserted into the continuous press machine are placed between the mirror surface steel belt 6 contacting with a surface side and the steel belt 7 contacting with a rear side and the top and bottom endless steel belts receive heat through the heating drum.

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----- KWIC -----

Abstract Text - FPAR (1):

PURPOSE: To obtain endlessly and continuously a melamine decorative sheet having an equal quality to that obtained with a batch method, by a method wherein a set of impregnated sheets of paper are inserted between steel belts of a continuously molding press machine having the steel belts and they are pressurized and molded with tension of the steel belt and pressure through a pressurizing part with a fluid.

Abstract Text - FPAR (2):

CONSTITUTION: Respective rolls of overlay impregnated paper 1 which is obtained by impregnating overlay paper with quick hardening melamine resin, pattern impregnated paper 2 which is obtained by impregnating pattern paper with the quick hardening melamine resin, core impregnated paper 3 which is obtained by impregnating core paper with quick hardening phenolic resin and packer impregnated paper 4 which is obtained by impregnating packer paper with quick hardening phenolic resin or quick hardening melamine resin are fitted to an impregnated paper reel off device A so that they can be laminated in order from the upper one and inserted into a continuous molding press machine B. The continuous molding press machine B is constituted of a heating drum 5, endless steel belts 6, 7 and a pressurizing part 8 and driving of the endless steel belt is performed with the heating drum. A set of the sheet of the impregnated paper inserted into the continuous press machine are placed between the mirror surface steel belt 6 contacting with a surface side and the steel belt 7 contacting with a rear side and the top and bottom endless steel belts receive heat through the heating drum.

Title of Patent Publication - TTL (1):

MANUFACTURE OF ENDLESS MELAMINE RESIN DECORATIVE SHEET

DERWENT-ACC-NO: 2002-707282

DERWENT-WEEK: 200276

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TITLE: Twin belt press has two metal pressure belts with lower and upper stringers, roller body units, compression section and support plates

INVENTOR: BECK, P

PRIORITY-DATA: 2001DE-1014381 (March 23, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10114381 A1	October 10, 2002	N/A	000	B30B 005/06
WO 200276697 A1	October 3, 2002	G	028	B27N 003/24

INT-CL (IPC): B27N003/24, B27N003/26 , B30B005/06 , B30B015/34

ABSTRACTED-PUB-NO: WO 200276697A

BASIC-ABSTRACT:

NOVELTY - The twin belt press comprises two metallic pressure-belts (1,2) continuously circulating on a vertical plane. The lower stringer (1') of the top pressure belt and the upper stringer (2') of the bottom pressure belt run above each other at a distance apart corresponding to the thickness of the panel material, and are supported on the support plates of an outer support structure, as they run continuously over flat roller body units (30',30).

DETAILED DESCRIPTION - The accumulated particles strewn in the compression section (3) are pressed together under the action of pressure and heat. The roller body units and or the pressure belts are heated or cooled separately from the pressure section, outside the pressure section on the return path of the roller body units and/or pressure belts, from emerging from the pressure section to their entry.

USE - Method and twin **belt press** for the continuous production of particle-board bonded together by **thermosetting** bonding agent.

ADVANTAGE - Certain parameters can be altered in the production of particle board without also altering the compression section, pressure, temperature and speed.

DESCRIPTION OF DRAWING(S) - The drawing shows a longitudinal section through a twin **belt press** with roller chains.

Pressure belts(1',2') Lower and upper stringers 1,2

Compression section 3

Roller body units. 30',30

----- KWIC -----

Basic Abstract Text - ABTX (1):

NOVELTY - The twin **belt press** comprises two metallic **pressure-belts** (1,2) continuously circulating on a vertical plane. The lower stringer (1') of the top **pressure belt** and the upper stringer (2') of the bottom **pressure belt** run above each other at a distance apart corresponding to the thickness of the panel material, and are supported on the support plates of an outer support structure, as they run continuously over flat roller body units (30',30).

Basic Abstract Text - ABTX (2):

DETAILED DESCRIPTION - The accumulated particles strewn in the compression section (3) are pressed together under the action of pressure and **heat**. The roller body units and or the **pressure belts are heated** or cooled separately from the pressure section, outside the pressure section on the return path of the roller body units and/or **pressure belts**, from emerging from the pressure section to their entry.

Basic Abstract Text - ABTX (3):

USE - Method and twin **belt press** for the continuous production of particle-board bonded together by **thermosetting** bonding agent.

Basic Abstract Text - ABTX (5):

DESCRIPTION OF DRAWING(S) - The drawing shows a longitudinal section through a twin **belt press** with roller chains.

Basic Abstract Text - ABTX (6):

Pressure belts(1',2') Lower and upper stringers 1,2

Patent Assignee Terms - PAN (1):

METSO **PAPER** INC

Patent Assignee Terms - PAZZ (1):

METSO **PAPER** INC

Title - TIX (1):

Twin **belt press** has two metal **pressure belts** with lower and upper stringers, roller body units, compression section and support plates

Standard Title Terms - TTX (1):

TWIN **BELT PRESS** TWO METAL **PRESSURE BELT** LOWER UPPER
STRINGER ROLL BODY UNIT
COMPRESS SECTION SUPPORT PLATE

DERWENT-ACC-NO: 1989-120569

DERWENT-WEEK: 198916

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TITLE: Laminating heat-sensitive adhesive resin precoated film
to paper - by laminating film to paper and feeding
laminate between lustering endless steel belt and pressing
endless belt

PRIORITY-DATA: 1987JP-0225389 (September 10, 1987)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 01068594 A	March 14, 1989	N/A	005	N/A

INT-CL (IPC): B29C065/48, B29L009/00 , D21H001/04

ABSTRACTED-PUB-NO: JP 01068594A

BASIC-ABSTRACT:

Laminating heat sensitive adhesive resin precoated film on paper comprises
laminating the film on the paper and feeding the paper between a lustering
endless steel belt and a pressing endless belt to compression weld the film to
the paper.

USE - For glossy paper mfr.

----- KWIC -----

Basic Abstract Text - ABTX (1):

Laminating heat sensitive adhesive resin precoated film on paper comprises
laminating the film on the paper and feeding the paper between a lustering
endless steel belt and a pressing endless belt to compression weld the film to

the paper.

Basic Abstract Text - ABTX (2):

USE - For glossy paper mfr.

Title - TIX (1):

Laminating heat-sensitive adhesive resin precoated film to paper - by
laminating film to paper and feeding laminate between lustring endless steel
belt and pressing endless belt

Standard Title Terms - TTX (1):

LAMINATE HEAT SENSITIVE ADHESIVE RESIN PRECOAT FILM PAPER
LAMINATE FILM
PAPER FEED LAMINATE LUSTRE ENDLESS STEEL BELT PRESS ENDLESS
BELT

US-PAT-NO: 5433905

DOCUMENT-IDENTIFIER: US 5433905 A

TITLE: Production process and apparatus

----- KWIC -----

Brief Summary Text - BSTX (8):

The intent of this steaming is not to cure the mat but to preheat and soften it. Since the mat at this point is still of a relatively loose composition (at a low density) only steam of low pressure and thus low temperature (120.degree. C.) can be employed, otherwise the forces of the steam would tear the mat apart.

Brief Summary Text - BSTX (9):

Therefore, in the above process, the mat can only be preheated by the steam and has to be further heated to effect curing. This is done by passing the preheated mat further through the heating section similar to the current practise of continuous presses. Despite the improvements which result from the use of steam the primary disadvantage of processing fixed sized boards, namely, off-cut losses, still persists.

Current US Cross Reference Classification - CCXR (4):

425/371

US-PAT-NO: 3992135

DOCUMENT-IDENTIFIER: US 3992135 A

TITLE: Apparatus for continuously manufacturing boards

----- KWIC -----

Brief Summary Text - BSTX (9):

Another method of curing is by the use of dielectric heating. However, the apparatus employed generally utilizes the stray field concept, which involves electrodes at spaced intervals generating a field which crosses through the mat to be cured. This method, while operable, has proved somewhat inefficient in application because, firstly, it is basically a preheater and not available during the final cure, and, secondly, the R.F. field produced at the electrodes must cross through the metal platens, thus absorbing some of the energy generated.

Detailed Description Text - DETX (7):

In the preferred embodiments of the invention, the belts 16 and 30 preferably are steel, but may be of any suitable substance possessing a low coefficient of friction. Consequently, by conventional means the belts can be heated to preheat the mat prior to the final curing step if so desired. The curing step is accomplished by a dielectric heating operation which utilizes the platens and/or the belts as electrodes if a thick board (i.e., over 1/2 inch) is desired. This method permits the mat to be uniformly heated to effect a proper curing in minimum time. If a thin board is desired, then air utilized in the air platen can be heated by conventional means to effect a proper cure.

Detailed Description Text - DETX (19):

It has been stated hereinbefore that critical to the board manufacturing process is the curing operation, for it is this step which determines to a great extent the amount of equipment and space required to produce a satisfactory board. It is desirable to achieve a fast, uniform curing and to this end, the heating of belts 16 and 30 (mentioned above) is contemplated by the present invention in order to preheat the mat M prior to its reaching the

main curing station between platens 36 and 38. Additionally, as pointed out hereinabove, the air supplied to the platens may be heated for curing purposes. Typically, this could take the form of heat exchange apparatus associated with the air compressor which transfers heat generated by the compressor to the air thereby raising the belt temperature to the order of 225.degree. to 350.degree. F. Also, the platens may include conventional means for receiving a supply of steam for curing, or they may incorporate radiant heating elements. However, each of these heating schemes is limited in respect of the thickness of the mat which may be cured as well as the speed of curing.

Current US Cross Reference Classification - CCXR (2):

425/371

US-PAT-NO: 3975559

DOCUMENT-IDENTIFIER: US 3975559 A

TITLE: Method for producing a business form article

----- KWIC -----

Brief Summary Text - BSTX (2):

A sheet of transfer paper, such as a sheet of carbon paper, comprising tissue or bond or the like as a substrate, is well known as a transfer element between two record sheets or between two sheets of information carrying paper. However, numerous problems are involved in the production and use of such sheets of transfer paper or carbon paper. For example, costs of production of such carbon paper are considerable. Also, the carbon paper is usually smudgy or dirty to handle. Furthermore, a sheet of carbonized paper has considerable thickness which adds to the thickness of a superposed set of record sheets. The thickness of the carbon paper, therefore, reduces the capability of a pressure or impact member to apply information by pressure or impact through a large number of sheets in a multicopy set. Furthermore, such carbonized paper contributes to image distortion as a result of the fibrous nature of the paper.

Current US Cross Reference Classification - CCXR (3):

156/267

L Number	Hits	Search Text	DB	Time stamp
1	430	(156/583.5).CCLS.	USPAT; US-PGPUB	2003/06/23 17:32
2	611	(425/371).CCLS.	USPAT; US-PGPUB	2003/06/23 17:32
3	115	paper and (((156/583.5).CCLS.) or ((425/371).CCLS.))	USPAT; US-PGPUB	2003/06/23 17:51
4	29526	(web or nonwoven or non-woven or mat) same (cure or curing or cured or thermosetting or thermoseting or thermoset or resin)	USPAT; US-PGPUB	2003/06/23 17:53
5	412	(preheat\$3 or pre-heat\$3) same ((web or nonwoven or non-woven or mat) same (cure or curing or cured or thermosetting or thermoseting or thermoset or resin))	USPAT; US-PGPUB	2003/06/23 17:53
6	18	((preheat\$3 or pre-heat\$3) same ((web or nonwoven or non-woven or mat) same (cure or curing or cured or thermosetting or thermoseting or thermoset or resin))) and (((156/583.5).CCLS.) or ((425/371).CCLS.))	USPAT; US-PGPUB	2003/06/23 17:54
7	90	((web or nonwoven or non-woven or mat) same (cure or curing or cured or thermosetting or thermoseting or thermoset or resin)) and (((156/583.5).CCLS.) or ((425/371).CCLS.)) not (((preheat\$3 or pre-heat\$3) same ((web or nonwoven or non-woven or mat) same (cure or curing or cured or thermosetting or thermoseting or thermoset or resin))) and (((156/583.5).CCLS.) or ((425/371).CCLS.)))	USPAT; US-PGPUB	2003/06/23 18:06
8	664	(belt-press or press-belt or (belt near1 press\$3) or beltpress or pressbelt).ti,ab.	USPAT; US-PGPUB	2003/06/23 18:15
9	41188	paper.ti,ab.	USPAT; US-PGPUB	2003/06/23 18:08
10	63	((belt-press or press-belt or (belt near1 press\$3) or beltpress or pressbelt).ti,ab.) and paper.ti,ab.	USPAT; US-PGPUB	2003/06/23 18:12
11	2	tissue.ti,ab. and ((belt-press or press-belt or (belt near1 press\$3) or beltpress or pressbelt).ti,ab.)	USPAT; US-PGPUB	2003/06/23 18:12
12	5940	(belt-press or press-belt or (belt near1 press\$3) or beltpress or pressbelt)	EPO; JPO; DERWENT	2003/06/23 18:19
13	600359	paper or tissue	EPO; JPO; DERWENT	2003/06/23 18:19
14	740	((belt-press or press-belt or (belt near1 press\$3) or beltpress or pressbelt)) and (paper or tissue)	EPO; JPO; DERWENT	2003/06/23 18:19
15	338923	(heat or heater or heated or heating) and (thermoset or thermosetting or resin or curing or cured or cure)	EPO; JPO; DERWENT	2003/06/23 18:21
17	49	((belt-press or press-belt or (belt near1 press\$3) or beltpress or pressbelt)) and (paper or tissue)) and ((heat or heater or heated or heating) and (thermoset or thermosetting or resin or curing or cured or cure))	EPO; JPO; DERWENT	2003/06/23 18:21